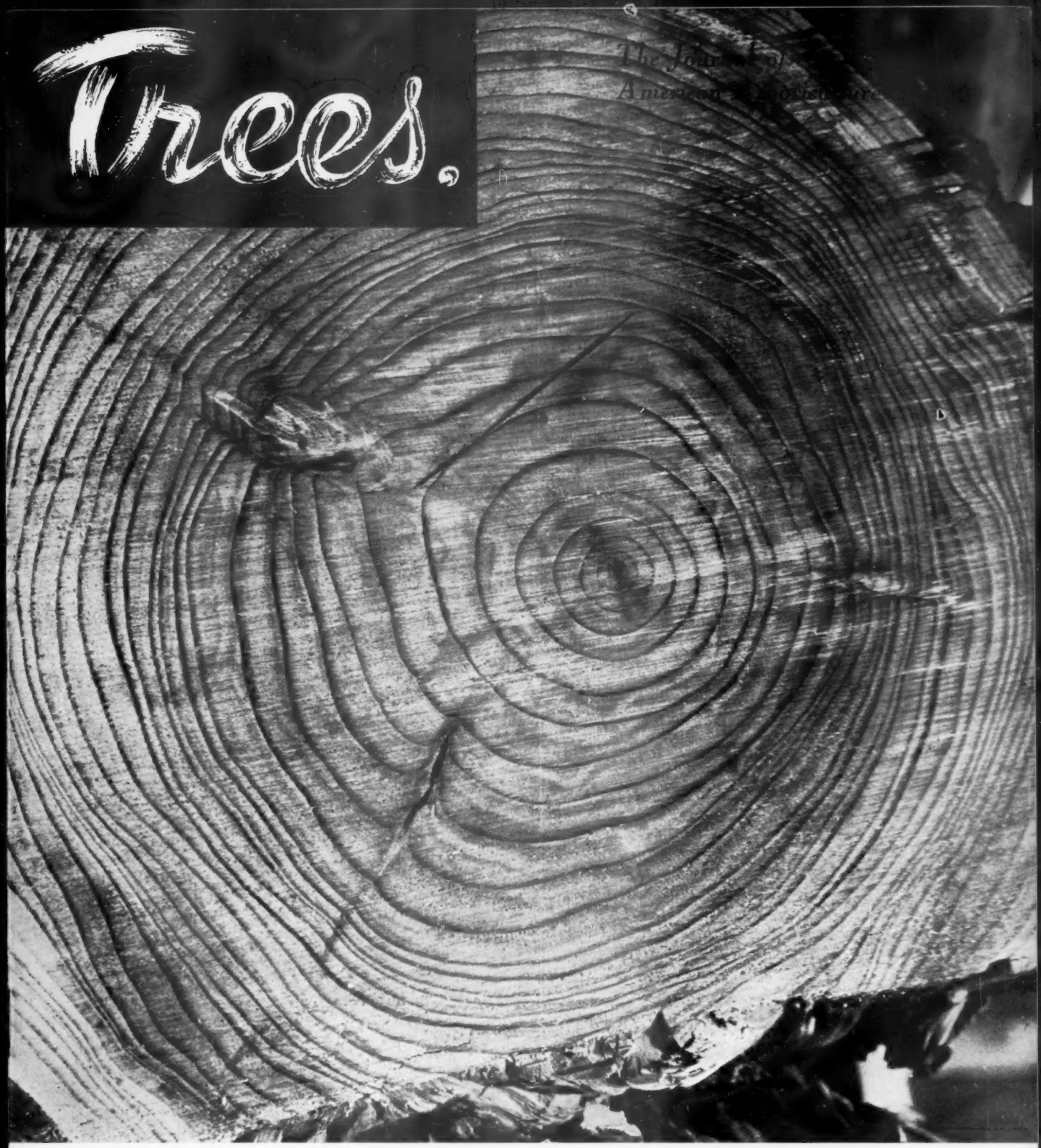
# Trees.



Interesting Tree-ring Study of a Deodar Cedar *(Cedrus Deodara)*
felled in Pasadena, California, last year

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# ALONG THE WAY

With . . .
EDW. SCANLON

■ Here's A CLIPPING from the Los Angeles Daily News (Sept. 23, '42) that really TAKES THE CAKE as an ALL-TIME LOW for public officials EXCUSES TO DESTROY TREES:

Potential Hideout Lost to Spies as Palm Trees Go.

Palm Trees which for many years have decorated the Temple Street side of the Hall of Justice were being removed today.

The trees, which were being displaced on orders of the county defense council, were characterized as potential hiding places for saboteurs by Sheriff Eugene W. Biscailuz, chairman of the defense council.

They will be presented to the United States Navy and will be transplanted to a Navy training station.

* * *

■ *FRED H. VOGEL, FORESTRY PROF AT MICHIGAN STATE tosses a HUGE QUESTION MARK in the general direction of this COLUMN'S VERACITY regarding a statement in THE LAST ISSUE. It SEEMS that D.B.H. for the HOOKER OAK AT CHICO, CALIF., was given as 28 FEET—F. H. V., says, "BUT PERHAPS YOU'VE HAD UNUSUALLY GOOD GROWING WEATHER SINCE I WAS LAST IN YOUR FAIR STATE."*

*Yes, COULD BE, and that's why I have TO EXAGGERATE SLIGHTLY when recording CALIFORNIA TREE GROWTH.*

* * *

■ And now, PHIL ALDEN, the very able EDITOR OF THE SHADE TREE, joins the ranks of CALIFORNIA SCOFFERS—in a SUBTLE WAY, but scoff he did. Reviewing a RECENT BOOK ON SHRUBS, PHIL calls attention to the shrub which the AUTHOR CONSIDERS the finest IN AMERICA—it was NOT A CALIFORNIA BUSH—and PHIL STABS in the back with "CALIFORNIA, PLEASE COPY."—alright 'SKEETER.

* * *

■ *There was a LOT OF TALK before the recent WORLD SERIES of breaking up the INVINCIBLE Yankees, but, says NORM KLEIN, pres. of MID-WEST TREE EXPERTS, KANSAS CITY, "The Cards TOOK CARE of this problem and now Joe McCarthy can START REBUILDING."*

* * *

■ The NAVY has called another—HENRY OVERHOLTZER, guardian OF MAYWOOD'S (CALIFORNIA) TREES, left recently. He didn't say in WHAT CAPACITY, but I suppose they'll make him a REAR ADMIRAL anyway.

* * *

■ *Well THE ROAD FOR TREES becomes TOUGHER. The draft is BLOWING COLDER AND COLDER on the EDITOR'S NECK, so in desperation he ups and JOINS THE NAVY. This is SCANLON of whom I write, NO KIDDIN'.*

*Therefore, UNDER THE CIRCUMSTANCES, it has been decided to try and keep a RUSTLE IN THE LEAVES OF TREES (kinda corny, huh!) and PUBLISH at least TWO SUPER EDITIONS IN* 1943. *These issues will be the MAY CONVENTION NUMBER FOR THE WESTERN CHAPTER OF THE NATIONAL SHADE TREE CONFERENCE, and the AUGUST CONVENTION NUMBER FOR THE NATIONAL SHADE TREE CONFERENCE. An effort will be made to at least DOUBLE THE SIZE of each of THESE ISSUES—so sadly we announce the NEXT ISSUE following this WILL BE MAY* 1943.

*I know you will ALL UNDERSTAND and stand by 'till this DAMN MESS IS CLEANED UP.*

* * *

■ Well, FRANK (CITY-BROKE) HANBURY is in there PITCHING STRIKES. Gave a talk recently to the ILLINOIS ASSOCIATION OF CEMETERY Officials at their convention with the result that we have another order for PAT PIRONE'S SWELL BOOK "MAINTENANCE OF SHADE AND ORNAMENTAL TREES."

* * *

■ *SAW A BEAUTIFUL 15 foot specimen of MAYTENUS BOARIA (Chili) several weeks ago in the BACK COUNTRY near OCEANSIDE.*

*DANA BOWERS, TED HOLDERNESS, and "A-W" made an interesting trip through the SOUTHERN PART of this GRAND STATE (CALIFORNIA OF COURSE) and bumped into this RARE TREE in a rancher's yard. The tree grows QUITE COMPACTLY and in spite of a PENDULOUS HABIT looks like a BIG MYRTUS. Foliage SHINY, SMALL. and VERY RICH. A tree to use MUCH MORE.*

* * *

■ FORREST STRONG, OF MICHIGAN STATE COLLEGE, has started on the FILM AND SLIDE LIBRARY OF THE NATIONAL SHADE TREE CONFERENCE. You camera bugs should CONTACT HIM and see what his plans are, or maybe I can INDUCE HIM to give us a story on "HIS AIMS" for the NEXT ISSUE.

* * *

■ *The UNIVERSITY OF NORTH CAROLINA LIBRARY is planning a display of HORTICULTURAL AND AGRICULTURAL magazines. They have invited TREES, very much thanks to CHARLES RUSH, DIRECTOR.*

* * *

■ WALTER PESMAN, Instructor of LANDSCAPE ARCHITECTURE, UNIVERSITY OF DENVER, and author of a FINE BOOK which is reviewed on page 18, has sent in several STREET TREE LISTS for the NATIONAL STREET TREE SURVEY. The SURVEY, incidentally, is COMING ALONG FINE with only two sections STILL INCOMPLETE.

* * *

■ *DICK ALMAN, CITY ARBORIST OF CEDAR RAPIDS, is expecting—his ARMY CALL; and RED JACOBS, the DAVEY PHENOM is a photographer for the ROYAL ROOSEVELT NAVY.*

* * *

■ The UNIVERSITY OF TOLEDO is instituting a POPULAR COURSE in camouflage COME JANUARY, and CHARLIE CRAWFORD is going to do the PROFESSORING. Anyone who has material THAT WILL HELP will do CHARLIE a favor by sending it to him (Indian Road, Toledo, Ohio).

WHY DON'T they start a course in TREE APPRECIATION for POLITICIANS so we can get some ADEQUATELY PLANTED and DECENT LOOKING CITIES. That's the BEST CAMOUFLAGE in the world.

## CONTENTS

Vol. 5 Bi-Monthly No. 5

**Subscription Price $1.00 per Year**

*The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.*

Editorial . . . . . 4
Let's Get It Over—Quick
A Word For Shade Trees

Gas and Compaction In Soil Diagnosis 6
*A Robert Thompson*

Trees of Agathis In California . . 7
*Clayton O. Smith*

Plant Materials In Modern Warfare 8
*F. M. Trimble*

More Data On Fastigiate Tree Forms 9

The First Fifty Years Are The Hardest . . . . . 10-11
*Jacob Gerling*

Something On Street Tree Ordinances 12
*R. K. Alman*

Deciduous Tree Around Geneva, Switzerland . . . . . 12
*Theodor G. Ahrens*

Wet Summer Tree Troubles . . . . 14
*P. P. Pirone*

Sargent's Seven Best Conifers . . . 16

Book Rviews . . . . . 18

■ *BOB THOMPSON'S getting used to Chicago—IT SAYS HERE, and is KINDA RELIEVED to get away from the BIG TENT. Yes, the NATIONAL PARK SERVICE is now in Chi.*

* * *

■ VANCE SHIELD, JR., of the ST. LOUIS SHIELDS, is a LOOEY in the Army, and VANCE, THE PERE, is looking for some kind of a commission and WON'T TAKE anything less than MAJOR-GENERAL. How about THE WAACS, Billie?

**AUTOMOTIVE TREE MOVER FOR SALE**

equipped with Winch and brand new Power Takeoff. This machine handles from 4 to 10 inch trees with dispatch. Very sturdily constructed with many years of built-in service.

**A BARGAIN FOR CASH**

**Mid-West Tree Experts**

**Suite 227 Plaza Theatre Bldg.**
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Sept.-Oct.-Nov., 1942 *The Journal of American Arboriculture* Volume 5 — No. 5

EDWARD H. SCANLON, Editor
Editorial Office: 1102 Twentieth Street—P. O. Box 886—Santa Monica, California

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; *a country without trees is hopeless*"

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# CORDIALLY YOURS

## LET'S GET IT OVER—QUICK

In these times when all normal channels of business are necessarily obstructed it is difficult for us in the very peaceful pursuits of horticulture and arboriculture to know exactly what to do.

It is quite evident by now that practically all forward progress has definitely halted. No one is in the mood to talk trees while "Rome burns" and rightly. War seems to create a sense of helplessness among otherwise resourceful men and women, possibly because its technique is known to so few and unquestionably because it is abhorred by so many. Because of this abhorrence, and other contributing factors, people have been reluctant to give up their normal life. This is easy to understand. Men have invested money and priceless time into businesses and to stand by helplessly while it fades before them creates a sense of frustration that leaves them badly befuddled and unable properly to appraise the situation at hand.

What to do? A business that has rendered good honest service and therefore has a sound foundation need have little fear of picking up where it left off, but still that inability to make a clearcut decision remains. This problem is haunting tens of thousands of Americans and may in part account for some of the lack of all-out effort to win a war that without this all-out effort we stand a fair chance of losing.

We are not going to lose the war, not solely because our cause is right, but because we're not built that way. But still that decision must be made, and made by the individual American. We do not, cannot stand to have it made by the bungling leadership in Washington; they are not going to win this war, it will be the American people who will win it in spite of the theorists and bunglers.

Let's make that decision now—roll up our sleeves and get it over quick; we will get it over quick as soon as we realize that that is the only way that we can safely return to normal channels. Let's quit kidding ourselves America, the champ is up against the toughest challenger of all time. We need a knockout and we're just the guys who can do it.

## A WORD FOR SHADE TREES

"When temperatures range to high records and every device for keeping cool is welcomed, a word for shade trees will command more attention than in other seasons, and that word is given by Assistant State Forester C. H. Schaeffer, of the Columbia office. He cites an example of the great value of shade trees as shown in recent temperature readings in South Carolina and it is fair to assume that those readings were made in our capital city, whose temperatures tend to run up to degrees of specially impressive heights. Thermom-

eter readings cited went up as high as 120 degrees in the sun, yet those in the shade of trees registered slightly over 101 degrees, thus giving a difference of nineteen degrees in favor of shade areas. While no one could boast of 101 degrees as cool or comfortable, no doubt Columbians are duly appreciative of the difference between 101 and 120 degrees, and it may well be pointed out that a shade tree in Charleston, swayed by ocean breezes, would afford much cooler shelter, lending considerably more significance to the point in question.

Shade trees have high value in residential districts, in yards, and for farm residences, but an even greater usefulness for highways, and streets in business districts contributing as they do to the comfort of travelers, of shoppers, and of those whose duties take them out in the mid-day sun, the forester points out. Then, too, as an ornamental factor, adding to the beautification of highway and street, a well cared for tree is indeed a blessing. It is stated that large shade trees, in addition to shielding people, sidewalks, street paving, and buildings from the sun's rays, transpire several hundred gallons of water daily, a function that aids in reducing the temperature of the surrounding atmosphere. More trees for city and country mean more comfort and more beauty, and *what town or wayside is there that does not need these contributions to happiness?*—Editorial from Charleston, (S. C.) Evening Post.

# Sprayer Repairs Easy to Get

"Don't try to buy a new sprayer if you own an old Hardie," is the meat of a message sent to shade tree men, park superintendents, and growers of fruits and vegetables by The Hardie Mfg. Company. The great number of owners of Hardie High Pressure Sprayers used for shade tree maintenance and spraying generally are assured of prompt and unlimited service and repair parts by this old established manufacturer.

"Repair parts and replacements definitely are available," says E. B. Stilson, Hardie Sales Director. "We have plenty in stock and are allowed to distribute them freely. One reason for our splendid position in this regard is the fact that repairs and replacements are so seldom needed that our large stocks remain undepleted from year to year. Today finds us strongly positioned to give service to a lot of old Hardies that in normal times would have been replaced with new machines.

"Any old Hardie still is a good sprayer. There are thousands of Hardies 10, 20 and more years old in this country that can easily and cheaply be restored to practically new efficiency. Our message to sprayer users is to fix up the old one and let the new sprayers go to those who haven't any sprayer at all, and to the War Department, which today is the biggest single owner of Hardie Sprayers.

"Sprayers are used by the fighting forces in this war in many and unique ways and, further, every new sprayer takes material sorely needed for tanks, aircraft, cannon and other fighting equipment."

SOME LARGE COAST LIVE OAKS, (*Quercus agrifolia*) June 1942 IN CALIFORNIA

| *County* | *Location* | *Owner* | *Circum. at ground* | *Diam. at 5½'* | *Height* | *Crown Spread* |
|---|---|---|---|---|---|---|
| Napa | Chiles Valley | H. G. Whittle | 35' | 76.4" @ 2' | 108' | 129 & 110' |
| Napa | Hoisting Wks. Canyon | | 17'5" | 94" @ 4' | 65-70' | 119 & 117' |
| San Diego | Ramona | Zimmer Place | 27' | 74.76" | 75.5' | 105 & 100' |
| Santa Cruz | Boulder Creek | F. M. Daniels Ranch | | 57.6" | 75.8' | 125 & 90' |
| Santa Cruz | Olympia | Soth Ranch | | 94" @ 4' | 80' | 100' av. |
| Santa Cruz | Soquel | Izant Place | | 59" | 62' | 110' |
| Los Angeles | Duarte | Oakleigh Court | | 67" | 60' | 124 & 120 |
| Los Angeles | Pomona | A. J. Pirdy | 25' | 80" | | 101' |
| Santa Clara | Palo Alto | Mrs. W. I. Brobech | | 107.3 @ 5' | 45½' | 93' av. |
| Santa Clara | Gilroy | W. S. Hanna | 38' | 84" | 88' | 123-110' |
| Santa Barbara | Santa Inez Val. | Paradise Camp | | | 50' | 115' |

*Courtesy of Woodbridge Metcalf*

# Cork Oak Acorns Needed

Park Superintendents, Nurserymen, and in fact anyone who wishes may cooperate in the movement inaugurated several years ago by Professor Woodbridge Metcalf to establish a sound and sizable cork industry in California and other parts of the United States. You are urged to give this project a few minutes of your time and to contact Mr. Metcalf.

UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
BERKELEY, CALIFORNIA

October 26, 1942

Dear Editor:

CORK OAK ACORNS 1942

In order to raise 75,000 cork oaks for distribution to landowners in 1943 and to comply with requests for acorns from four southeastern states, we will require about 2,000 pounds of acorns from this year's crop. In addition the various agencies wish to have an equal amount to carry on direct seeding and other experimental propagation. Thus we can use two tons of acorns if it is possible to get them.

Pasadena, Los Angeles, and other Southern California cities, have a considerable number of these trees in parks and along streets and we will greatly appreciate your cooperation in having the acorns raked up and sacked as soon as they fall. Assistant Farm Advisor Marston Kimball, Asst. County Forester Carl Gerhardy, and various people from the U. S. Forest Service and Soil Conservation Service are cooperating in this program in order to save time and tires. They will see that acorns are used in local nurseries or forwarded as promptly as possible as directed.

I enclose herewith a brief reprint on the cork project as I may not have sent you one previously. Mr. Greenan and I stripped a few trees in Southern California in September but would like to plan to do additional experimental removal of cork sometime next summer.

In appreciation of your cooperation in this matter,

Sincerely yours,
WOODRIDGE METCALF.

# Gas and Compaction In Soil Diagnosis

*By* A. ROBERT THOMPSON, *Forester*
*National Park Service*

The killing of trees by illuminating gas is a familiar story to those concerned with city trees, especially those planted along streets. In recent years the incidence of gas-injured trees has increased owing to the change-over in many cities from low to high pressure systems and the increasing age and deterioration of distribution systems.

Fenner (2), in a recent paper, has summed up the various ways in which gas is thought to cause injury to trees. He states these as follows:

"First, by displacement of oxygen. Second, by elements in gaseous state in soil. Third, by condensed constituents in soil. Fourth, by disturbance of normal water and food relations. Fifth, by ethylene. Sixth, by hydrocyanic acid in solution in the soil water."

Experiments at the Boyce Thompson Institute (1), (3), show that hydrocyanic acid and other cyanide compounds are the principal killing agents of illuminating gas.

The diagnosis of gas injury is not simple since there is no single response that will show definitely that the injury is due to illuminating gas and not to other causes such as drought, disease, noxious fumes, or insect injury. In certain cases, initial injuries may be of the ethylene-induced type, such as epinasty, yellowing along veins, and the abscission of some green leaves.

One of the most positive indications of gas is the tomato plant test, which is 200 times more sensitive than the human nose, 75 times as sensitive as the canary bird, and 50 times more sensitive than the best chemical test. When a tomato plant is placed in a hole dug in a gassed soil, epinasty of younger leaves usually shows up within 30 hours of exposure.

One of my friends, Mr. James C. Martin, in a letter written in 1935, listed several common symptoms that may be associated with gas injury:

1. Browning of foliage of part or all of tree;
2. Foliage discoloration similar to fall color;
3. Wilting of leaves with no discoloration;
4. Separation of bark, cambium, or sapwood;
5. Presence of shot-hole borer;
6. Yellowing or bronzing around midrib and outer leaf edges;
7. Odor of gas;
8. Browned grass or shrubbery near tree;
9. Sickly yellow haze-like appearance over entire tree.

Of 512 trees which Mr. Martin had examined at that time, 491 were diagnosed as gas injury. Of these, 77 were dead or too far gone for treatment. Of those treated, 90.7 per cent responded successfully. Treatment included either aeration, feeding, soil washing, soil replacement, pruning, girdling root treatment, or a combination of these.

Fenner's (2) recommendations for treatment of gassed soils include the following:

"1. In cases where trees show gas injury due to ethylene-induced responses —yellowing, epinasty, and abscission, aerate thoroughly and water heavily if possible.

2. Where trees show definite gas poisoning due to hydro-cyanic acid induced responses—wilting or drying—don't waste time and money trying to save from death. Aerate soil around nearby trees.

3. Where gas is found in soil by whatever means and has not been in soil long enough to be noticed on trees, aerate at once."

### PUBLIC-USE AREA DETERIORATION

Of particular importance to arborists and foresters in public employ is the degeneration of vegetation in various public-use areas. It is a matter of general observation that the greater the concentration of human use a wooded area receives, the greater the abuse of the vegetation and the more rapid its degeneration. This degeneration has been studied by a number of investigators, notably Dr. E. P. Meinecke. His writings on the subject (4), (5), (6), (7) and those of others have served to awaken interest in preventing further degeneration and to initiate action in rehabilitating areas already suffering from overuse or abuse.

In an effort to extend Dr. Meinecke's excellent work, the writer has initiated additional studies to determine, if possible, a positive index between the rate of vegetative degeneration and the behavior of soil under visitor load. A preliminary report on this study has been made (8).

To date, studies have been initiated in many of the national parks and in some rehabilitation measures have been carried out. In addition to basic inventories and soil void ratio analyses, rehabilitation work has included redesign of public use areas to permit better control of traffic and use, soil improvement through cultivation, aeration, fertilization, and mulching; erection of guard rails and barriers to prevent root trampling and trunk injury; and the common tree preservation practices.

Although considerable of the damage done by visitors doubtless is preventable through controlled use and improvements in design, a certain amount of it is probably nonpreventable, and maintenance programs of remedial measures will be needed annually to ameliorate the damage and perpetuate the vegetation. Fortunately, a relatively short use-season and long annual rest period makes such a plan feasible for many of the public use areas that receive the heaviest impact from the public. Roads, buildings, and equipment are expected to degenerate with time and use and demand periodic maintenance, and it is up to us to convince the administrators that the soil and vegetation in campgrounds, picnic grounds, and other public-use areas are equally, if not more, in need of periodic care and rehabilitation. After all, most of the forested recreational areas are selected for this special purpose because of the existence of the very vegetation that takes such a beating from the public. If such areas are to be preserved for future generations, adequate and systematic maintenance programs must be provided. This means considerably more than raking up papers and other debris, painting tables and benches, and repairing fireplaces; proper maintenance of public-use areas must include periodic soil restoration through cultivation, mulching, and perhaps aeration and fertilization, as well as such common tree preservation practices as disease and insect control, pruning, wound treatment, bracing, etc.

We have had time to touch only briefly upon but a few of the important phases of soil treatment and improvement. May I urge those of you who are interested in pursuing the subject further to sit down with a set of the past proceedings of the National and Western Shade Tree Conferences, THE SHADE TREE, TREES and kindred publications. If you have not done so recently, the concentrated information found between the covers of these booklets will amaze you, and I am sure you will be better arborists for having refreshed your memories.

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*(Continued on page 18)*

# Trees of Agathis In California

*By* CLAYTON O. SMITH
*University of California Citrus Experiment Station*
*Riverside, Calif.*

The species of Agathis (Dammar-Pine) are tender conifers allied to the Araucarias. There are 10 species of which the better known are *Agathis robusta* (*A. Browni* new comb.) and *Agathis australis*, the true Kauri-pine. These two species, and *Agathis orientalis* (Lambert-pine) have been introduced into California at various times. *A. robusta*, a native of Australia, seems to have been the best adapted to California conditions and is found growing in Los Angeles and the neighboring cities, and in Ventura, Santa Barbara, and Riverside counties.

The Kauri-pine, also known as Cowerie spruce is a native of New Zealand, where it attains a large size, 80-100 feet tall, with a trunk 4-10 feet in diameter. It was formerly abundant in the North Island as forests but is gradually becoming exterminated. Until a short time ago the lumber was used for building and inside finishing but now it is limited to cabinet work and other purposes. The tree has a resiniferous bark that falls off in large flakes and accumulates as resinous deposits at the base of the tree where it becomes massed together in the soil of the Kauri forests. The gum, used in making varnish, is often mined as a partly fossilized resin at depths of 5-6 feet below the soil where forests of this tree existed in past ages. The resin was found in chunks the size of peas to as large as one's head and these masses of resin were found by sounding for them with long iron rods in the swamps.

*Agathis australis* has been planted in California but I have not been able to locate trees here. It is planted in the Hawaiian Islands. Dr. Fairchild states in his book, "The World was My Garden," that his attempts to establish these trees in Florida have not been successful to date.

*—Photos courtesy the Author*
*Cones, cone scales, seed and leaves of Agathis robusta*

*Agathis robusta, 74' high, on the grounds of Mr. Harry Chase, in Riverside, Calif. Compare for size with the fine Phoenix Canariensis palm.*

Trees of *Agathis robusta* are rare in Southern California. In the January, 1939 issue of the magazine, "TREES" appeared a note of the occurrence of *Agathis robusta* under the heading "ALONG THE WAY" This tree was growing on the grounds of the late Senator Jones of Santa Monica. The tree was recently destroyed and at that time measured 40 feet tall and the trunk 3 feet in diameter at breast high. While this tree was a magnificent specimen, there are other trees of *A. robusta* in California much taller than the Santa Monica tree.

In the Huntington Botanical Garden at San Marino is a tree 80-90 feet in height with a trunk 2 feet in diameter. It fruits every year and seedlings have

*(Continued on page 18)*

# Plant Materials In Modern Warfare

*By* F. M. Trimble
*St. Louis, Mo.*

The art known today as "camouflage" has been used in some form by most of the inhabitants of the earth and has been recorded in earliest history of activities of the human race. The degree of application and refinement has varied with the intelligence and activity of aggressors as well as with the need for protection on the part of individuals or groups. To gain advantage over prey or enemies and to guard against extermination has always been a part of what is commonly known as "the struggle for the survival of the fittest."

In warfare between early tribes of the human race the camouflage of homes and operations of war involved largely the use of native materials and geographic features immediately available. As an example of this the early explorers coming to America found the Indians adept in hiding behind trees and bushes. Early American history records that the defeat ofBraddock's Army in western Pennsylvania in 1775 was largely attributed to the activity of Indians under command of the French. Other tribes of the world have used native materials with equal effectiveness and invading forces often found it necessary to develop counter-camouflage and deception, making it necessary in many instances to change long established methods of attack. The employment of trained camoufleurs and the improvement of defense equipment has brought about the use of a long list of artificial materials resembling the natural items.

With the adoption of captive balloons for observation purposes by the Federal army during the Civil War the first real attention to camouflaging of troops movements became necessary. It was during the first world war that observation posts and snipers often used artificial tree trunks made of "papier-mache" or other materials while roads were often "blotted out" to the aerial observer by a covering of artificial materials suspended overhead. The rapid development of aerial photography since that has required the camoufleur to adopt new "ruses" to fool the enemy since, by means of repeated photographs from different angles the old fashioned stereoscope could be used to look under objects such as trees and roadway coverings. The use of high speed observation planes equipped with highly efficient automatic cameras, telescopic lenses and dark rooms soon forced the camofleur to exert every possible ingenuity to keep out of sight of the enemy. This in time called for the attachment of skilled camoufleurs with every combat unit and a thorough schooling of soldiers in methods of hiding from the enemy. The attachment of filters to the lens of the aerial camera has made it possible to readily locate most all artificial objects or materials but fortunately the modern camera cannot easily penetrate natural colors or analyze natural arrangement of ground surface coverings. By using living trees, shrubs and grasses along with selected type of paint resembling the natural color of green foliage accompanied by deception in arrangement, fairly good protection should be expected.

Regardless of the increased effectiveness of aerial observation the use of newer anti-aircraft guns now require the observation and combat planes to travel at such high speeds and altitudes many former details of camouflage may be neglected or at least replaced by attention to mass covering and arrangement to represent natural conditions. Only a thoroughly trained plantsman can analyze the kinds of ground cover shown on a photographic plate while well planned deception in arrangement of non-foliage materials will often confuse the attacking forces. Thayer's "Law of Protective Coloration," as used extensively during the first World War must now be applied more closely than before.

With the ability of these newer cameras to reveal any change in arrangement or color invisible to the human eye, either in day or night time, there appears to be an urgent demand for a broad change in the application of technique by the camoufleur to include the correct use of native plants indigenous or common to the locality of operation, whether it be in combat zones or for the protection of permanent installation of factories and other structures necessary to the production of war materials.

As may be expected the brunt of the work will fall upon the use of trees and shrubs and, in order that these may be effectively employed the future camoufleurs might well include thoroughly schooled plantsmen, arborists and landscape architects of wide experience in the technical and practical fields.

### *SELECTION OF PLANTS FOR CAMOUFLAGE PURPOSES*

Plant materials are playing an important role in modern warfare and the selection of the proper species or kind of tree, shrub or grass is becoming more exacting with the extension of the scope and intensity of field operations. With the development of new and better offensive equipment there would appear to be a great need for the employment of thoroughly trained plantsmen as a complement to the usual camouflage battalions attached to army combat units.

Camouflaging in the future will not only increase in importance for the protection of small areas or localities in the combat zones but will be needed to protect larger areas, about the cities and industrial plants vital to furthering of the war effort. The location of wooden structures and adjustment of topographic features will continue to be used to confuse or deceive the enemy but living plant materials should furnish the more important installations. To successfully reproduce or maintain natural growth over such larger areas plantsmen with knowledge of ecology and silviculture and landscape engineers well versed in plant arrangement should be useful complements of the military strategist and construction engineer.

By combining the efforts of these technicians large areas may be treated so well as to thoroughly confuse enemy planes that are now forced to fly at such high altitudes it is impossible to concentrate bombing upon individual objects, such as: power plants, chemical factories, munition dumps, airports, automobile parks, gun emplacements and other important defense structures. Should the intensity of bombing become so great as to force any of these vital plants to retreat to subterranean locations it is easy to visualize the increased importance of plant materials in camouflaging the entrances. Photographs may still be taken of these areas but the fast flying bombing planes under fire by anti-aircraft guns would be badly handicapped in selecting an objective in time or with any degree of certainty as to cause serious damage, especially where the plant materials and arrangement thereof are identical with the surrounding natural growth pattern. While existing ground cover and topographic features may be used to hide vital factories, gun emplacements and parking lots it is anticipated that the selection of plant materials will be carefully studied so the maximum use and adaptability will be secured for each unit or locality in need of further treatment. The type of protection needed will control to a large degree the kind of tree, shrub or grass to be used.

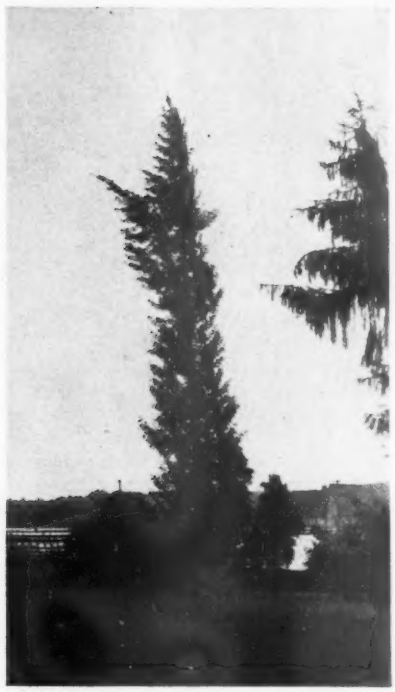
*(Continued on page 15)*

# More Data On Fastigiate Tree Forms

*By* EDWARD H. SCANLON

By a strange coincidence a story out of the past has come to light to augment and add great interest to this current discussion of upright tree forms.

Several days ago, the writer while looking over an old file of American Forestry magazine (*American Forests*) found in a 1920 issue (Vol. 26, No. 324) story which is reproduced here and which we have every reason to believe pertains to the same tree in the Arnold Arboretum of which Mr. H. J. Hohman, Kingsville Nurseries, Kingsville, Md., has sent the picture shown on this page. There was also a picture of the tree with the story which bears a striking resemblance to the picture sent in by Mr. Hohman.



*Gingko biloba fastigiata in Baltimore Co., Maryland 60' high*

The 1920 story follows:

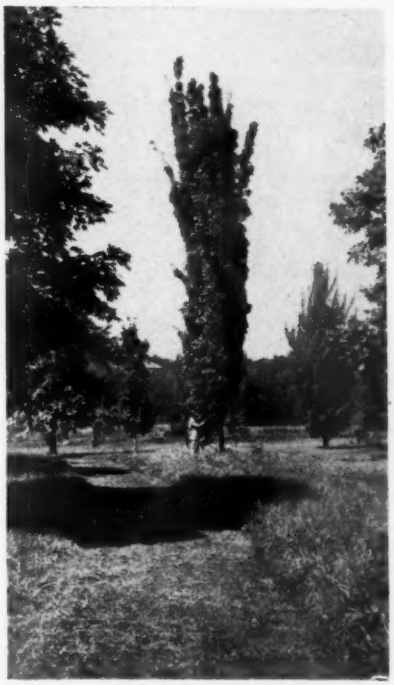
MASQUERADING MAPLE

There is one tree in the Arnold Arboretum which probably has been the subject of more good-natured disputes than all the rest of the foreign and domestic subjects in the big collection put together, says, Mr. E. I. Farrington, in the *Boston Evening Transcript*. It is an exceedingly narrow tree, shooting straight up into the air, and with the branches hugging the trunk as closely as though they were strapped in that position. The argument chiefly indulged in by visitors concerns the identity of this tree, many of them contending that it is a Lombardy poplar, while others, somewhat more fully versed in arboreal lore, assert that it doesn't possess the characteristics of the poplar at all. The argument is not always settled even when the little aluminum label attached to one of the lower branches is read, because the words *"Acer saccharum monumentale"* may not mean much to the average person. Being interpreted, though, they disclose the fact that the odd-shapped tree is a sugar maple. It is often spoken of as the fastigate sugar maple, meaning that its growth is upright. It is, in point of fact, one of the narrowest trees known, and its appearance is strikingly distinct. Standing in a somewhat isolated position, although within the maple group, it looks like a sentinel on guard, and is so tall that it is readily observed by motorists on the main highway. Not infrequently remarks about its unique character are made by those who pass by and glance over the vine-covered stone wall. The tree is fully fifty feet high, but only a few feet in diameter, and it looks so little like an ordinary sugar maple that it is difficult for anyone to realize its claim to intimate kinship with that well known New England tree.

*—Photos courtesy* H. J. HOHMAN

*Tsuga Canadensis, fastigiate form. 12' high. Width at base 36"*

The parent tree was found growing in a cemetery in Newton in 1885, and this, like all other similar trees now known, came as grafts from this Newton specimen, which seems to have appeared as a spontaneous freak of nature, it being understood that a natural freak is not always something unpleasant or amusing to look upon. This maple is really handsome, especially in the fall, when it takes on a brilliant coat of red and yellow. Trees of this form might well be substituted for the better known Lombardy poplar, for they have a much longer life, although not growing so rapidly.



*Acer saccharum columnare center at Arnold Arboretum with Dr. Donald Wyman. This may be the "Masquerading Maple" referred to in the story. At right is Acer rubrum columnare*

Mr. Hohman's letter which accompanied the pictures shown on this page follows:

DEAR MR. SCANLON:

Some time ago, I wrote you that I had taken a picture at the Arnold Arboretum of Acer sacharum columnare and Acer Rubrum columnare, both on same shot. You mentioned in your letter to me that you would like to have the film of this shot for it was unusual to get both at one time. I am enclosing the film, also the picture and even have Don Wyman of the A.A. right in the middle. I think Dr. Wyman told me

*(Continued on page 15)*

# The First Fifty Years Are the Hardest

*By* JACOB GERLING

This is a story about a man and his work, a man who would not recognize the meaning of the word "can't"; it is a bit of Americana, typical of so many men whose accomplishments prove that the ladder of success, however steep, is not beyond the reach of willing hands used with able determination. An inspiring example for every man who is interested in park developement, the work of Bernard H. Slavin, Supt. of the Rochester Park Dept., covers over one-half century of earnest endeavor and noteworthy achievement.

It is the Fall planting season of 1890. A boy is pushing a wheel-barrow, piled high with Red Osier bushes, to where men are planting along an old creek bed. His load is cumbersome and it is with difficulty that he weaves his way over the broken ground. But his large, well-sinewed frame is bent to the task and the wheel-barrow is forced steadily through the soft soil as he repeats, half aloud, the words "Red Osier, Cornus stolonifera." So intently is he trying to memorize the common, generic and specific names of the Dogwoods on his wheel-barrow that when it suddenly hits a root, he is caught unprepared and the load topples to the ground. For a moment he looks searchingly at the fallen bushes, not so much disturbed at their slipping off the wheelbarrow as he is concerned over the fact that the mishap had caused the names he was trying so hard to master to slip from his mind. He delivers his plants and hurries back to the wagon where his foreman is pruning more shrubs for setting-out. When the last of the Red Osiers had been wheeled away and he was piling the wheel-barrow with another species, despite determined effort the names continued to elude recollection. He was reluctant to start moving a different species without having mastered the names of the last and swallowing his pride blurted to the foreman, "I'm sorry, but the name of those red ones has slipped my mind." The foreman, John Dunbar, whose kindly help and expert advice were to be such important factors in moulding the career of this young man, looked at the shame-faced youth and answered in mock severity. "You'll have to remember the names of these plants longer than five minutes if you ever expect to be a good park man." Repeating the forgotten names, he continued, "It is most important that you not only know the scientific names of the plants we use, but also learn to recognize them wherever you may find them."

"Yes, sir, I'll try my best," replied the boy, and in that answer lies the reason for his success. It was by trying his best that he was able to overcome the almost insurmountable obstacles which lay between the un-learned but knowledge-hungry youth he was then and the widely recognized authority on horticulture he was to become.

"Sprucing Up" the Evergreens

BERNARD H. (BARNEY) SLAVIN

Only 10 more pulls to go and Slavin, superintendent of city parks will have that first hard 100 years of service completed. He started his 51st year in the parks service today. Slavin, 66, is a nationally recognized horticulturist and builder of Durand-Eastman Park. He was pioneered in public skating and coasting under city auspices. He is shown above as he examines the evergreens at Durand-Eastman to ascertain winter-injuries.

Barney Slavin Begins 51st Year with City Parks

Genial Barney Slavin today began his 51st year of service with the Rochester parks.

He celebrated with a brisk round of pruning trees ... Durand-Eastman Park, supervising a crew of 30 men. ... shelter ...

*Photo courtesy Rochester Times-Union*
*Barney Slavin, recently retired as Superintendent of Parks at Rochester, N. Y.*

Rochester, N. Y., has a system of outstanding parks. They are outstanding because they are noted throughout the country for their beauty and recreational facilities. Durand-Eastman Park is recognized as a splendid example of what can be accomplished in park developement, not only as a pleasure resort for the lay public but as a source of information for students interested in it's plantings of scientific value. Parks like those found in Rochester do not "just happen" in ordinary city development. They are the result of various factors, chief of which is the man, or rather men, responsible for their being. Rochester has been most fortunate in having men in charge of and associated with the Park System who not only possessed great ability but were motivated by tireless enthusiasm and civic pride; men who gave, and still give, unstintedly of their time and efforts to promote what is today one of the finest park systems in the entire world.

Thirty years ago, the site of Durand-Eastman Park was nothing more than several hundred acres of sandy terrain, partly covered with decadent woods and so hilly as to be unfitted even for profitable farming. Today, these same acres comprise a magnificently landscaped setting for extensive picnic grounds, a fine bathing beach, tennis courts, miles of scenic bridal paths and golf courses famous for their beauty. The artificial lakes provide fishing and boating as well as sanctuary for wild-fowl and ideal cover is abundant for small game as well as native deer.

The Pinetum at Durand-Eastman is one of the finest in the world and comprises rare and unusual specimens from many countries. Most every conifer which can be grown in this latitude, and many that have to be coddled not a little, are represented in this collection. This park has an exceptional planting of flowering crab-apples, which, with the Sargent Cherries and Dogwoods, cloud the vistas with pink and white when in bloom. Everywhere are clumps and borders of *Viburnums,* forty-odd species being used to embellish the roads and paths with their lacy flowers, colored fruits and many-hued Autumn foliage. Durand-Eastman Park is a paradise for both systematic and amateur botanists. One can find well cared for specimens of such interesting plants as the historically famous *Cedrus libani,* the dove-like flowered Davidia, massive-leaved *Paulownia imperialis,* handsome *Thujopsis dolobrata* and giant-flowered *Magnolia macrophylla.* There are flourishing clumps of Corkwood (*Leitneria floridana*), the evergreen *Prunus, Laurocerasus schipkiensis, Nyssa ogeche* and many others offering evidence of someone's skill in growing exotic plants far removed from their native environment. Everywhere in the valleys and meadows are thousands of different genera, species and varieties of trees and shrubs, from the humble, commonplace native

forms to rare and striking specimens from Europe, Asia and other far-distant lands. This planting and cultivation of so many different plants was a gigantic task and required many years of skillful planning and expert execution. The Rochester Park Dept. was not wanting. To change this five-hundred acre tract of swampy gullies and eroded hills from wasteland into one of the world's most beautiful parks was indeed a big order to fill, and there were many interested people who feared it could not be done. But the man to whom we are most indebted for the Durand-Eastman Park of today, with its velvet-green valleys and picturesque hills, had that confidence in his own ability which comes only to the man who gives years of hard work and endless study to the job he loves. This man, who is now in his fifty-second year with the Rochester Park Dept. is Bernard H. Slavin and he is just as actively interested in the welfare of 'his' parks today as he was over one-half century ago. Not a broken branch nor failing plant escapes his trained eye. If there is a tree, shrub or flower in any of the parks that he cannot locate and name, this writer has yet to find it.

The career of "Barney" Slavin, as he is affectionately known to employees and citizens alike, is the kind of success story that every American admires; it is the personification of all that has made our people great—initiative, courage, an insatiable thirst for knowledge and the will to "make good." Starting as a day-laborer in the park dept. this man "arrived" the hard way, and by days of toil and nights of study he has achieved success in his chosen field. His is the real success, not mere financial affluence. He cares little for money and less for glory. His is the gratifying satisfaction of having done a life's work well—a life work that has and will bring pleasure and profit to countless people of many generations. The measure of his ability and accomplishment lies in the fact that for many years he has been recognized as an expert horticulturist and widely regarded as an outstanding authority on park development. One has to work with Barney Slavin to really appreciate the competent, conscientious manner in which he carries on his work.

—*Photo Courtesy of the Author*

*In Durand-Eastman Park at Rochester, N. Y., is this splendid world famous Pinetum established by Barney Slavin*

Most folks like sliced peaches and cream, but very few realize that Barney Slavin is the man who succeeded, when many failed, in overcoming the two pests which threatened the peach-growing industry, were costing orchardists many thousands of dollars annually, and fast getting beyond control—the peach borer and phoney peach. The borer attacks the trees just where they leave the ground and drills under the outer bark, destroys the cambium layer and saps the vitality of the tree which eventually ruins the crops. Phoney peach is a condition which causes the fruit to atrophy when partly developed and is usually present in borer infested trees.

Barney Slavin has in the Rochester Parks what is one of the most complete Prunus collections in America. Some years ago, while working through the south-west in search of plants for his parks, he noted a wild plum native to that territory. This particular plum was of very sturdy growth and greatly resembled the cultivated peach in texture, but the wood was much harder. These characteristics led to experimentation in grafting peach scions to stock of this wild plum, identified as Prunus hortulana. These grafts formed perfect unions and produced peach trees very effectively immunized against the borer and incidentally free from phoney peach blight. These trees also fruited one year earlier than the parent peach when grown in the usual manner. This was a most desirable property inasmuch as the cultivated peach is a very short-lived tree at best, five to ten years being their good fruiting span. When Mr. Slavin had definitely established proof of his theory, he turned it over to the Government which had been conducting experiments for years in an effort to relieve peach growers from the damage of these two costly blights. As a result of his work with peaches, the U. S. Government offered Mr. Slavin a position doing research and collecting in this country and the Far East, but Barney declined because of the experiments he was then carrying on in developing the Rochester Parks and in which he was far more interested.

A few years ago, when our Government started reclamation work in the devastated drought areas of the country, which had been rendered sterile as the result of dust storms which carried away the top soil, one of the greatest problems was establishing plantings of trees and shrubs which would form windbreaks to hold the surface against erosion until it could be built-up by cover crops. For this highly important preliminary work, a particular type of tree was necessary, one that would take hold and thrive on a minimum of moisture in poor soil. Several species of native trees were tried with varying success, including *R. pseudo acacia,* but the percentage of loss in setting-out was often discouraging. Mr. Slavin suggested that a species of Asiatic Thuja, which he introduced into his parks, be given a trial. This tree is closely related to our native Arbor Vitaee.

*(Continued on page 17)*

# Something On Street Tree Ordinances

*By* R. K. ALMAN, *City Arborist*
*Park Dept., City of Cedar Rapids, Iowa*

This article might better be titled, "Exit—The Horse and Buggy Tree Ordinance," because we must streamline our laws if we expect the public to support them. We all know that a law is useless without public support (Remember the prohibition era?). To get public support it is necessary to have short, simply worded laws that the public can read and understand. True, many cities are doing remarkable shade tree work under an antiquated ordinance but they could do a much better job if they had modern tools with which to work.

The first requirement of a good ordinance is a well fitted author. The man who draws up the first few drafts must have a thorough knowledge of the conditions and problems of the particular city for which he is designing the law, because no two cities are alike. In general, the arborist or other city employee responsible for the care of the street trees is better fitted for this work than the City Attorney. After the arborist has incorporated all the essential points in a clear concise form the material should then be turned over to a legal counsel for changes that are necessary to make it air tight. Some portions may have to be omitted due to lack of jurisdiction or a conflict with standing ordinances on other matters.

The second important step is to obtain several good ordinances from other cities. Where to obtain them is a question that the writer may be able to help you answer. Before writing the Cedar Rapids Ordinance, over eighty letters were sent out covering every state in the union, requesting copies of street tree ordinances. Replies were received from 55 cities and 35 ordinances were analyzed and filed before any attempt was made to put anything down in writing. Of these 35 laws, several were outstanding and many were of merit. The writer does not wish to evaluate one above another because the ones that fitted our problems in Cedar Rapids may not be of the most value to you.

Tree ordinances may be divided into two parts. The first deals with the establishment of one or more persons, usually a City Arborist, who shall have the power to control all phases of tree planting, preservation, and removal. It should define his duties, method of appointment, and salary.

The second portion deals directly with the trees and shrubs. Some cities avoid including shrubs but the problems are so similar that they should be taken into account. A discussion of this portion dealing with protection of trees and shrubs would be worthwile but very lengthy. We shall confine ourselves here and say that study of other ordinances will bring out many points worth consideration.

Every ordinance contains a paragraph dealing with the protection of trees from injury, yet some ordinances of rather recent date devote another whole paragraph to the protection of trees from damage by horses, moving buildings, or construction. We may still have a few trees damaged in these ways but these cases are no different from damage by automobiles and trucks so why clutter up the paper with a lot of uninteresting reading. Word the general paragraph on injury so that it includes all the forms of damages and let the matter rest. Injury from gas or electricity are special cases and are worthy of special treatment.

Another common fault is to devote a lot of space to stating what trees should not be planted. We do have undesirable trees which we would like to avoid planting in the future. Yet, we may find that in certain areas and under extreme conditions one of the undesirable trees may be put to good use. Why confine ourselves by law? We have placed a person in authority who should be able to decide what trees are desirable in any given location. New varieties are introduced every year. They may be good or bad but we should not outlaw every member of a species just because the common form is not what we want in the better residential districts of our city.

Some ordinances state that trees shall be trimmed to a height of ten feet along our streets. This is sheer nonsence since we often plant trees that are barely over ten feet in total height. Where there is no sidewalk and a wide parking space exist with the trees set back from the roadway it is not necessary or always desirable to trim these trees to a uniform height of ten feet. Trees over highways need more clearance than those located along our residential boulevards. The statement of any set height of clearance will but hamper the arborist in his work.

The writer believes rather strongly that all these facts and figures mentioned should be placed in a separate document titled, "Standards of Practice." "Rules and Regulations Regarding Trees and Shrubs" could be used as a title but a certain resentment arises against these words. In the Standards of Practice facts and figures may be placed which are to be followed to the letter as long as they serve the best purpose for the city. As soon as advancements in technique are made, certain supposed satisfactory species found to be undesirable, or other important changes are necessary the arborist is at liberty to make the necessary revision in the standards without requiring the change to go through the hands of the city council and the city attorney. The advantages of this scheme are readily apparent and yet the arborist has the regulations down in writing to show the dubious property owner when he insists he wants a Chinese elm planted in front of his property.

The ordinance we developed is one that fits our problems in Cedar Rapids. We do not set it forth as a model ordinance nor as one that will work in your city. Yet, we feel that it has something others have lacked. It is strong, yet flexible, clear and easily read, yet legal and water-tight.

The arboricultural policy is not a new idea. Other cities have drawn up simple rules to be followed by the public. They have not, so far as the writer knows, fully utilized this means of ridding their ordinances of dated material.

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## Rust-Free Tools

The life of tools, progressively more difficult to replace, may be lengthened by keeping them rust free. Heavy deposits of rust can be removed by the use of a paste made from the following ingredients:

| | |
|---|---|
| Glycerine | 1 part |
| Oxalic acid | 2 parts |
| Phosphoric acid | 2 parts |
| Ground silica | 5 parts |

Coat the tools with the paste and allow them to stand in a warm place for 20 or 30 minutes, after which the paste and the rust with it can be removed by washing. Oxalic acid is harmful to some people, therefore, apply the paste with some suitable paddle or brush.

# Deciduous Trees Around Geneva, Switzerland

*By* Dr. Theodor G. Ahrens
*Geneva, Switzerland*

There is a wealth of deciduous trees in the parks and gardens of Geneva, Switzerland, not only a great variety of native central European species but also many noteworthy exotic species. The exotic species were first introduced to Geneva about the beginning or middle of the eighteenth century.

In the spring, magnolias with their striking glistening leaves and fragrant pink or white flowers abound in the parks and gardens. Three species, notably *Magnolia conspicua* or *denudata* from central China, *Magnolia macrophylla* from southeastern United States, and *Magnolia grandiflora* from southern United States greet the eye. Rather rare in Geneva, yet highly prized, is the beautiful American tulip tree *(Liriodendron tulipifera)* with its graceful leaves and yellow-green flowers. *Ailanthus glandulosa,* better known in the United States as *Ailanthus altissima,* has flourished at Geneva since it was first imported from China in 1751. In the nineteenth century *Cedrela sinensis,* a stately and noble tree, was imported from China.

In the spring, the extensive orchards of southwestern Switzerland and adjacent Savoy, notably the upper valley of the Rhone in Canton Valais, are radiant with fruit blossoms. The apricots of Valais are famous throughout central Europe. In the parks the flowers of the Japanese fruit trees, apricots, cherries, and plums are beautiful. A little later in the spring the flowers of the red and white hawthorn delight the eye. In late summer the red berries of European mountain ash (Sorbus aucuparia) are most conspicuous.

Black locust (*Robinia pseudoacacia*), an American tree now practically indigenous to Europe, shows its graceful white flowers, *Cytisus laburnum,* a member of the same family as Robinia pseudoacacia, i. e., the Pulse family (*Leguminosae*), with clusters of golden flowers is known in Germany as Goldregen (golden rain). Also of the same family, wisteria, a vine with purple blossoms, exists in various parts of Switzerland, many of which are superb old vines with stems as thick as tree trunks.

A rather uncommon but striking small tree is the Judas tree or redbud (*Cercis siliquastrum*) with its curiously shaped leaves and reddish-pink flowers. This tree and the catalpa (*Catalpa bignonioides)* become green in the spring later than other deciduous trees. Among the uncommon trees a *Celtis australis* is found before the "Monument de la Reformation." Likewise a few species of Sophora related to the Chinese and Japanese acacias are found.

Horsechestnut trees are universally found throughout Switzerland and make invaluable shade trees and for roadside and avenue planting. Three species are found: *Aesculus hippocastanum* (white) *A. rubicunda* (pink), *and A. flava* (yellow). The edible chestnut, *Castanea sativa,* is rare in Switzerland but common in adjacent Savoy.

Both domestic and foreign maples are ubiquitous. As shade trees the following species are common: *Acer pseudoplatanus, A. campestre, A atropurpureum, A. negundo.* The Japanese maples with red leaves of delicate shapes are beautiful in the spring in the parks.

Tamarisk (*Tamarix gallica*) has pink blossoms hanging down like weeping willows. Contrasting with the tamarisk is the Empress Tree (*Paulownia tomentosa or imperialis* in Europe) with gorgeous purple flowers. Birch, beech, ash, willow, and poplars abound here. *Fraxinus excelsior* attains stately heights. *Populus pyramidalis* (Italian Lombardy poplar) formerly was planted very much along highways, particularly in northern Italy. However, as the tree is subject to disease, it is not planted very much now. The territory abounds with superb old oaks, walnuts, elms, and lindens. Fig and mulberry trees are also common in parks and gardens. Other trees found rather frequently are the hornbeam, hickory (several species), and occasionally the persimmon. In the park La Grange stands a beautiful sweet gum (Liquidambar styraciflua) which is notable for its beautiful autumn foliage.

For a long time it has been customary to plant in squares and along avenues *Platanus orientalis* (oriental plane tree) as a shade tree. Of late it has become a general practice to clip these trees to an umbrella form. This is useful as a shade producer in the summer, but in the winter when the leaves have fallen the bare tree looks hideous.

Hedges of barberry (*Berberis*) or of laurel (*Kalmia*) are common. Osage orange *(Maclura aurantiaca* or *pomifera* in the United States) is occasionally used as a hedge.

In conclusion one can never forget the superb flowers of the rhododendrons, azaleas, and kalmias in the spring and early summer.

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# Wet Summer Tree Troubles

*By* P. P. PIRONE

During the past three months the rainfall in the Northeastern States has been so frequent and at times, so heavy, that tree troubles are now unusually abundant.

Precipitation records taken at New Brunswick are as follows:

June—3.26 inches
July—6.75 inches.
August—8.93 inches.

High as these figures are, however, they do not tell the complete story. During most of this period rains fell so frequently and cloudy weather so often preceded and followed rains for at least several days, that these additional factors further helped to increase the severity of tree problems.

As a result of these abnormal conditions, several diseases that normally occur only sporadically are now quite common and can be expected to be more widespread this fall and even next year. Some of the trouble cannot readily be detected so soon after the rainy spell because affected parts are below ground or because several months must elapse before the trouble has progressed sufficiently far to produce definite symptoms in the above-ground parts. The latter is especially true of several destructive tree diseases

## BASAL ROT OF HARDWOOD TREES

The disease known as basal rot is caused by the fungus *Phytophthora cambivora*, and is known to attack hardwood trees, especially the Norway maple. Three years ago it was known to have destroyed at least two hundred Norway maples in New Jersey alone, but it has remained quiescent since then with only an occasional tree succumbing during the past two years. When the disease was first reported by the author in 1939, the most extensive outbreaks were found to be associated with high soil moisture content and poor drainage.

The first positive case of basal rot in 1942 was recently found by the author on a 5- to 7-year-old Norway maple in a Staten Island nursery. Six additional trees showing typical symptoms, rotting of the inner bark at the base of the trunk and main lateral roots, were found in various sections of New Jersey by the author, although no laboratory isolations of the fungus were attempted from these. Several New Jersey arborists have also described that which is apparently the same disease on several species of maples.

Basal rot is a good example of a fungus disease of tree roots that is favored by rainy weather and unfavorable soil factors. The same appears to be true of the shoe-string root rot disease (*Armillaria mellea*), cases of which are now being brought to the author's attention each week.

Nurserymen doing tree maintenance work as well as commercial arborists are advised to consider the possibility of root diseases when asked to explain the premature loss of leaves or dying of branches of shade trees. Too often, leaf spot diseases or escaping illuminating gas in the soil are blamed for abnormal above-ground symptoms, when actually invasion by root—and stem-invading fungi are responsible.

A few minutes spent digging around the trunk and main roots will aid greatly in clearing up any conflicting opinions. The discovery of dead bark in these areas, subsequent cutting into it, and the tell-tale browning of the inner bark and sapwood beneath are strong indications that the bulk of the trouble is localized in the roots. Obviously, the exact cause of such decay can be determined only by laboratory isolations, and adequate chips of bark and wood taken from the margin of the dead areas should be sent to this laboratory.

Diagnosis of shoe-string root rot seldom requires laboratory tests inasmuch as the white-wefts of fungus tissue beneath dead bark near the soil line, is usually quite distinctive by the time wilted foliage or poor vigor are noted in the tops. In advanced stages of decay long, black strands (shoe-strings) of fungus tissue over or beneath the dead bark are also present. These strands so nearly resemble tree roots that the casual observer is likely to mistake them for such. A typical mushroom stage of this fungus also occurs but is rarely found on hardwood trees in street and ornamental plantings since severely infected or dead trees are usually removed before this stage develops. It is, however, fairly common on undisturbed, affected or dead trees in woodlands.

## AERIAL ROOTS

Although not a disease in the strictest sense, the formation of aerial roots on large trees has been an unusually common phenomenon during the past summer. Because little has been written on this type of growth, the following observations are offered:

Aerial roots begin to develop at a point just above any extensive trunk injury. Their development in such areas is not unusual. What is more so, is the fact that such roots can continue to grow downward beneath dead bark, often for considerable distances.

The largest and best developed aerial root yet seen by the author was found by Mr. Carl Witte, Horticulturist for the Essex County (N. J.) Park System on a 50-year-old American elm. The main body of the root (nearly an inch in diameter) started above an injury about 20 feet from the ground, and grew downward nearly to the ground level. The root system developed beneath dead bark on the north side of the tree, radiating fan-wise down the trunk so that the smaller roots covered an area of more than a foot in width beneath the dead bark near the ground level.

Aerial roots are often seen by arborists in large cavities of old, neglected trees. Here, well-developed roots are found permeating debris and rotted wood which collect in such cavities.

The greater number of aerial roots found by the author or called to his attention by arborists and other interested individuals, is also attributed to the frequent rains of the past summer. During seasons of more normal rainfall, such roots rarely have conditions satisfactory for continued development.

## LEAF DISEASES

Leaf diseases caused by parasitic fungi have also been more prevalent than usual. Among these were leaf-blotch of horsechestnut, Septoria leaf spot of dogwood, leaf spot of catalpa and others. The lesions produced by these fungi are quite distinctive and are readily diagnosed by competent arborists. They rarely produce permanent damage to the trees. On the other hand, the not-too-easily-diagnosed fungus diseases of the trunk and roots often produce severe damage and even death of the trees. For these reasons a correct diagnosis of the trouble is very important.

## NURSERY DISEASE NOTES.

---

## OLD MAN PLANTS A TREE

The old man plants a tree;
With pain, now, does he bend
And kneel to spread the roots. Not he
Nor any of his age shall spend
One single hour beneath its shade
Nor eat its fruit that is to be,
For soon he shall be subject to the spade;
Yet graciously the old man plants a tree.

BERT L. ROBINSON,
In the Los Angeles Times.

## Camouflage Story

*(Continued from page 8)*

Gun emplacements, while needing certain ground cover of shrubs and grasses to hide crews and shells, will require careful arrangement of tall pyramidal trees to camouflage the gun barrels. This latter group must likewise contain trees with short or flexible branches, to avoid stripping and burning by the discharge of the gun. The vacuum created by the discharge varies with the caliber and type of shell fired thus making it necessary for plantsmen to know the potential and individual requirement of each type and size of gun in order to obtain the maximum protection. For this purpose the tall, more or less, pyramidal trees should be used: hard maple, sweet gum, cedars, spruces, cypress, redwood, firs and hemlock.

Ammunition dumps, parking lots, entrances to underground storage or refuge and buildings vital to the war effort must have their straight line shadows broken up or covered by trees of the spreading type, such as: oaks, elms, hickories, ashes, willows, pines, hemlocks, cedars and the like. By insuring that these trees are native to the locality, are properly arranged to simulate natural arrangement, and planted in duplicate units accurate in every detail, the enemy is going to be badly handicapped in selecting a vital target in any one locality. In the present war there have been records of duplication of entire localities, changing of water courses, construction of lakes and destruction of timber to confuse the enemy.

## DUTCH ELM DISEASE OUTLOOK GLUM

The outlook for continuing the fight against the Dutch Elm Disease is not encouraging.

So far as Massachusetts is concerned, we have an appropriation of $5,000 to be spent at the State College in investigations and in the examination of suspected samples. West of the Connecticut River, particularly near the New York border, where an infected tree was discovered last Fall, we have found a strong sentiment to the effect that the Berkshires must protect their elms. Although no large local appropriations have been reported, we know that the tree wardens and others concerned are working in close cooperation with federal and state authorities.

As for the national situation, the Budget recommended $456,475 for the use of the Department of Agriculture in Elm disease work as compared with $353,345 last year. The extra $103,130 was intended to be used for the supervision of WPA projects in the states where a change in the method of management has taken place. With the expectation that the WPA will be considerably reduced, the House of Representatives has reduced this amount by $100,000. There is little hope that the cut will be restored by the Senate.

The most serious problem is the fact that the item of $20,500, which has been the sum used for research on the disease, has been entirely eliminated by the House. We are making every effort to have this sum restored. Unless research is continued, there is little hope of eventually finding a method that will enable the owner of beautiful elms to save them from destruction.

This Association will continue its efforts to save our elms regardless of any lack of federal cooperation.
difficulties encountered because of the

*—Massachusetts Forest and Park Association.*

## Fastigiate Trees

*(Continued from page 9)*

the Columnare was about 60 feet high and I do not remember the height of the Rubrum columnare.

The Fastigiate Gingko is about 60 to 65 ft. high, if I remember correctly and this tree is in Baltimore Co., Md., near us.

The Tsuga Canadensis—Fastigiate form, is right here in our Nurseries and was grown from seed. The tree is 12 ft. high and just about 30 to 36" wide at base. The foliage is intense green, making it most attractive. The lateral growth shoots up rather than out, which is customary with canadensis, and after the tree having carried this habit for so many years, I am now convinced that it is going to be a perfect fastigiate tree, which is much needed.

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H. J. HOHMAN.

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## Sargent's Seven Best Conifers

I am much interested in this brief list of conifers selected by the late Professor Sargent of the Arnold Arboretum and republished by George Slate of Geneva in Nursery Notes for April 23, 1942. I am a good friend of George Slate and was also a good friend of Professor Sargent and I cannot let this short statement pass without some personal comment and some suggestion for a fuller analysis of this important question from a larger point of view.

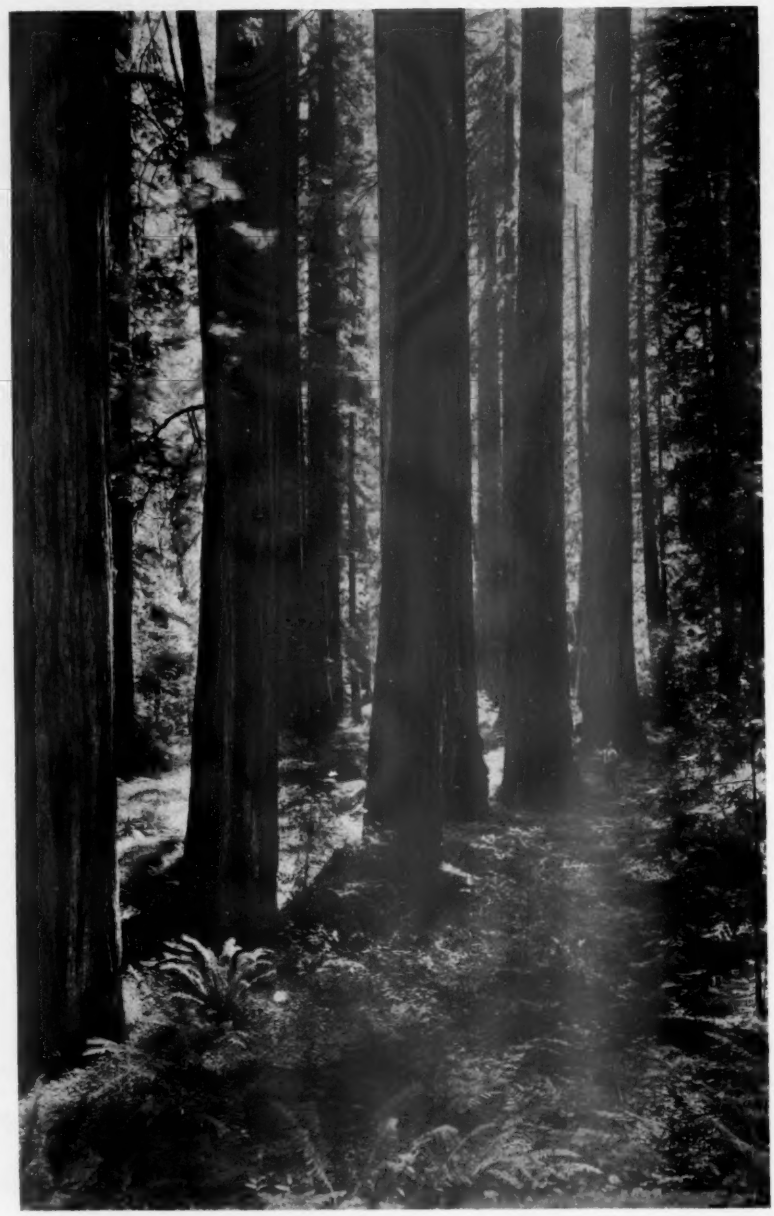
For four wonderful years I was assistant superintendent of the Arnold Arboretum in Boston. During this time I talked with Professor Sargent practically every day, rain or shine. I never knew a man who was more determined to get things done. He drove himself from morning to night. Once I asked him how he did so much work and his reply was, "I live each year as though it were the last year of my life."

It is true, as Mr. Slate has said that Professor Sargent was a keen student of trees and it is also true that the conifers on the Sargent list are all excellent trees. And yet when I read this short paragraph by George Slate my reactions were not wholly satisfactory. Some of them may be trivial and yet others I think are fundamental. For example, why the word conifers (cone bearers)? I doubt if the average home owner knows what a conifer is. From our present practical point of view why not say trees? And if we say trees then right away we must analyze the situation and think whether we are talking about trees which are evergreen or deciduous, i. e., drop their leaves for six months of the year. It is more important for the home owner to be sure of this than to know that his trees will bear cones. Of course, most conifers are evergreen and six out of Sargent's seven conifers are evergreens. And of course, Professor Sargent had been asked to select conifers and we must not blame him for that. But if we quote Sargent for the benefit of the average home owner we should explain the quotation and relate it to average human needs.

And finally, what do we mean by the word best, best for what? Probably Sargent meant that the Carolina hemlock (in his opinion) was the best hemlock for New England. And in like manner that the white pine was the best pine, and so forth. But if we want the opinions of Professor Sargent to be most helpful to home owners of today, I think we may well explain that those seven conifers are excellent not because they

*(Continued on next page)*

# Redwood Giants On Eel River



*This photo shows a colonnade of superb Redwood giants in The Garden Club of America Grove, across the South Fork of the Eel River from the Redwood Highway in Northern California. Your membership dollars will be invaluable in helping to preserve for posterity the many more thousands of acres of these noble trees that are still threatened by the lumberman's axe. Write to TREES or the Save-The Reedwoods League at the University of California, Berkeley, Calif., regarding membership in this noble venture*

*(Continued from preceding page)*
are cone bearers but because some are different in colors and others in form. That the hemlock is soft and graceful, and the spruce is more stiff and pointed. And that these characteristics and such other factors as denseness and the permanency of evergreens as compared with deciduous plants are the real values that make the home plantings private and attractive.

George Slate has started something and I am sure we all thank him for calling attention to the Sargent list of conifers. But in fairness to the grand subject of trees and in order to be most helpful to ordinary home owners, Sargent's opinions should be translated in terms of present day methods of using ornamental plants wisely. In this way our home landscape will really be related to human use and enjoyment.

RALPH W. CURTIS, Ithaca.

"Sargent's Seven Best Conifers" reported in the preceding issue of NEW YORK NURSERY NOTES was taken from an article by Professor Sargent entitled "Conifers" appearing on page 68 of the "Arnold Arboretum Bulletin of Popular Information." New Series, Vol. IX, No. 17, December 1, 1923, as follows: "The Carolina Hemlock. (*Tsuga caroliniana*) is placed first on the list as the most beautiful conifer now growing in the Arboretum; the others are the native White Pine (*P. Strobus*), the Japanese *Abies homolepis*, the Colorado *A. concolor*, the European *Picea omorika*, the Rocky Mountain *Thuya plicata*, and the Chinese Golden Larch (*Pseudolarix amabilis*)."

—G. L. S.

New York Nursery Notes.

## OAK TREE PRUNING AND THE WEATHER

In all the coastal areas and inland as far as Pasadena our oak trees have suffered heavily this year from infections of the *oak mildew fungus*. This is largely due to the prevailing weather conditions.

Our rains were late last season, the major portion of the total coming in the spring rather than in the winter months. This has been followed by almost continuous cool, foggy weather during the late spring and the summer months. Such climatic conditions are ideal for the development of the mildew fungus.

Since the fungus readily attacks any of the new succulent foliage, it is unwise to do anything to the trees that will stimulate such growth.

Most oaks (principally *Quercus Agrifolia*) respond to any pruning by sending out new growth; the heavier the pruning, the more new growth. Therefore, in all sections, except those whose especially dry climate makes them mildew free, oak trees *should not* be pruned this year. Nor should the trees be fertilized, since this also encourages the development of succulent growth.—TWIGS

## First Fifty Years

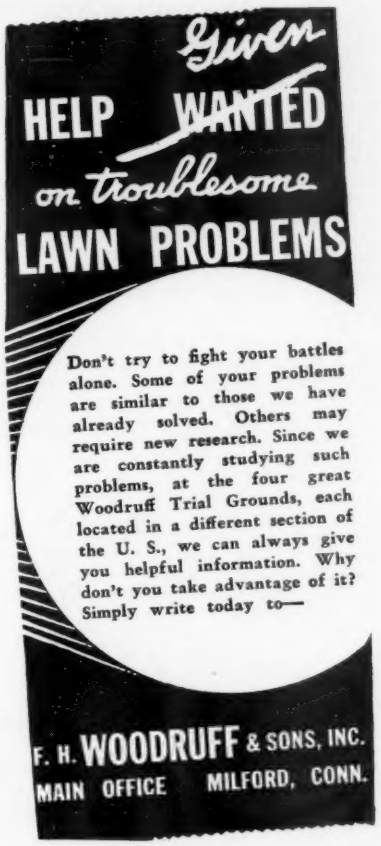
*(Continued from page 11)*

*Thuja occidentalis*, but does well under far less favorable growing conditions and Mr. Slavin's experience with *Thuja orientalis* had convinced him that this species was well worth trying in arid areas. Seeds were gathered and shipped to Government propagation centers and thousands of young trees subsequently planted in various locations. These young trees are doing exceedingly well and as the Rochester Parks, thanks to Barney Slavin, are one of the most prolific sources of this seed in the country, our Government has requested that he supply them with as much seed as possible.

This is another instance where Rochester's widely known Park System has proven of immense value in a very practical way. It is another occasion when the experience and knowledge of Barney Slavin proves of assistance in solving a problem quite important in the fine work now being done so well by Government agencies to replant and reclaim the stricken areas of the middle and Southwest.

Each year, tons of corn are fed to migrating waterfowl and thousands of ducks are banded and recorded in conjunction with the National Biological Survey. Bass breeding is carried on in two of Durand-Eastman lakes and each Autumn many fingerlings are released in the Park lakes and State waters.

Rochester's Park System is far more than a civic accomplishment of which that city may well be proud. The work done, and being done, by the men who give their best to provide amusement, pleasure and profit for all is most commendable. They plan and develop for our approval and nothing pleases the men who do this work so well as to have us enjoy the results of their labor. Barney Slavin is outstanding among such men, and fortunate indeed is this man who has built so fine a monument as Durand-Eastman Park with the work he loves.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# Authors and Books

**The following books may be ordered from TREES Magazine, Box 886, Santa Monica, California.**

THE NATURE AND PREVENTION OF PLANT DISEASES, by K. Starr Chester. The Blakiston Co., Philadelphia, Pa. 584 pp., illus. price $4.50.

While this book deals principally with economic crops there is enough splendid material dealing with ornamentals, trees, shrubs and flowers to make it very valuable to people in these fields.

The text does not end with a technical discussion of a disease but goes into a thorough discourse on the latest means of control or eradication.

The last six of the twenty chapters are of great basic value. The titles are: The Methods of Studying Plant Diseases; Environment and Parasitic Diseases; Ethiology and Epiphytology; Principles and Procedure on the Control of Plant Diseases; Control of Plant Diseases by Inducing Resistance and Control of Plant Diseases by Cultural Methods.

A fine book for everyone working with plants.

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LANDSCAPE ARCHITECTURE IN THE MODERN WORLD, by Karl B. Lohman. The Garrard Press, Champaign, Ill., 191 pp., illus., price $2.50.

Very easy and very interesting reading. This book should be the link between the past and the future in that it deals principally with the changing modern life and the trend toward a greater public appreciation for public beauty. This trend has been accentuated in recent years by the drift away from show place estates with the result that landscape architects have, in ever-increasing numbers, gone into public work. The results are pleasing to all.

There is much to recommend in this book.

---

MEET THE NATIVES
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372 S. Humboldt St., Denver, Colorado
216 Pages, illustrated, $1.25

The book is divided into five sections corresponding to the five Life Zones: Alpine, Subalpine, Montane, Foothills, and Plains. Each section has a short illustrated introduction concerning the flora of the zone.

In each section are listed the trees and shrubs of that zone (on green paper), and the red, white, blue and yellow flowers, each on correspondingly colored paper. Each list is arranged according to blooming period, from spring to fall.

About 700 species in all are described or identified by short terse descriptions.

50 photographs by the late Robert C. Grout illustrate the most attractive wildflowers.

154 line drawings identify other widespread plants: these are all arranged according to zone and color. Others illustrate typical scenery for each zone, flower parts, etc.

Water plants, vines, and weeds are listed separately.

There is an exhaustive list of elevations of towns, passes and peaks. An unusual feature is a Latin-English vocabulary. The book contains a short bibliography of the best works on Rocky Mountain plants.

It is pocket size with ring binding to facilitate use in the field and consists of 216 pages, index included.

Its purpose is to acquaint the amateur with the most outstanding trees, shrubs, and herbs of the region. Comparatively few scientific terms have been used; and these few are explained in a special list.

The book is the result of 25 years of study. While written in popular terminology it is considered botanically accurate by those in position to know.

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## Gas and Compaction

*(Continued from page 6)*

National Shade Tree Conference. p. 24-34.

2. Fenner, Carl. Present status of investigations into the effects of illuminating gas on shade trees. Lansing. 8 p. ms.

3. Hitchcock, A. E., Crocker, Wm., and Zimmerman, P. W. Toxicity of illuminating gas in soil. 1933. Proceedings of Ninth National Shade Tree Conference. p. 34-36.

4. Meinecke, E. P. A campground policy. 1932. Ogden. U. S. Forest Service. 16 p.

5. A report upon the effect of excessive tourist travel on California Redwood Parks. 1928. California Department of National Resources, Division of Parks, Sacramento. 28p.

6. Camp planning and camp reconstruction. (no date). U. S. Forest Service, California Region. 23 p.

7. Recreation planning; a discussion. 1937. Journal of Forestry.

8. Thompson, A. R. and Preece, E. F. A. method of determining the relation of soil compaction to vegetative degeneration in public use areas. 1940. Washington. National Park Service. Occasional Forestry Note No. 6. 14 p. plus ix.

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## Trees of Agathis

*(Continued from page 7)*

been distributed.

In Riverside, California, at least three trees of *Agathis robusta* are growing, one on the grounds of the former girls high school, 9th and Lemon Streets, and one at the home of William Bonnett, 6240 Hawarden Drive. The largest specimen is at the home of Harry B. Chase, 4323 Lemon Street. This later tree is situated at the corner of a large city lot and towers above all the surrounding shrubbery. It is 30 years old and on January 27, 1939, it measured 73.59 feet high with a circumference of 3 feet and 10 inches at 4.5 feet. It has a trunk not over 3 feet at its base. The trunk gradually decreases in thickness and bears a conical-shaped top. About 15 feet from the ground, a few sprouts have developed and it was from this material that some cuttings were successfully rooted. The tree could not be regarded as a satisfactory shade tree because of its upright type of growth. It produced a few cones that matured in September, 1935. The seed at this time had scattered to the grass sod about the base of the tree, where their single wings were pointing upward.

Some of the mature seed was planted but only a few were viable. In about two weeks the seedlings pushed above the soil with the seed coat still attached to the two cotyledons which elongated and became elliptical in shape but were enclosed within the seed coats for some weeks.

These seedlings are now three years old and 1 to 2 feet tall. The cones are somewhat longer than broad and have a flat end. The thin scales are loosely attached to a central axis and cover the one-winged seed. These scales soon loosen, fall away, and allow the seed to be disseminated.

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# TRANSPLANTONE

## MAKES ROOTS GROW FASTER AND REDUCES LEAF LOSS

TRANSPLANTONE treatment will enable this pine tree to continue uninterrupted growth after being moved.

While TRANSPLANTONE solution usually increases root development on all trees, evergreens or deciduous, it is especially effective on azalea, juniper, rhododendron, pine, hemlock, pyracantha, holly, pin oak and sweet gum. It is cheap insurance against replacement.

### HOW TO USE

REG. U.S. PAT. OFF.
TRANSPLANTONE

Dissolve 1 ounce of TRANSPLANTONE in 10 gallons of water. Apply to the root area of the tree after planting, using at least 1 gallon of solution for each inch of trunk diameter.

It pays to water holly, whether Japanese or otherwise, with TRANSPLANTONE solution immediately after moving.

**3 oz. can $1.00 — 1 lb. can $4.00**

*Buy from your dealer or write to*

**American Chemical Paint Co.**
Horticultural Division T-9 AMBLER, PA.

# Repairs and Replacements Definitely Are Available

● In times like these the owner of a Hardie Sprayer enjoys priceless advantages. Any old Hardie still is a good sprayer. And because so few repair parts ever have been needed, plenty of service material still is in stock and immediately available to Hardie owners everywhere. Let us help you carry on with your old Hardie. Ask your dealer or write

**THE HARDIE MFG. COMPANY**
**Hudson, Mich., Portland, Ore., Los Angeles, Calif., New York City**

HARDIE *Dependable* SPRAYERS
"THE ONLY SPRAY PUMP THAT IS COMPLETELY LUBRICATED"